

**Poster Title:**

**Biomarkers of Potential Harm in Smokers**

**Author(s):**

HJ Roethig<sup>1</sup>, K v Holt<sup>2</sup>, P Kuhl<sup>2</sup>, W McKinney<sup>1</sup>, M Zhang<sup>3</sup>, R-A Walk<sup>1</sup>

<sup>1</sup>Philip Morris U.S.A., Richmond, VA, USA; <sup>2</sup>INBIFO Institut fuer biologische Forschung GmbH, Cologne, Germany; <sup>3</sup> Philip Morris Asia Limited, Hong Kong

**Abstract:**

"Biomarkers of potential harm" (Clearing the Smoke Assessing the Science Base for Tobacco Harm Reduction IOM, 2001) for smokers should be reasonably expected to predict the clinical outcome in relation to smoking and should correlate with tobacco smoke exposure over time. The availability of such markers is limited. No such markers have been identified for lung cancer and COPD, except for change in FEV<sub>1</sub> over time. Several markers have been identified for cardio-vascular diseases to have predictive value for clinical outcome like Fibrinogen, HS C-reactive Protein, HDL-Cholesterol/Total Cholesterol Ratio, von Willebrand Factor, and Factor VII. Information on tobacco smoke exposure over time is not available from most studies.

There are numerous other biomarkers, which show differences between smokers and non-smokers for COPD and cardio-vascular diseases, but their correlation to clinical outcome has not yet been established: Myeloperoxidase, Interleukin-8, and Elastase/ $\alpha_1$ -Antitrypsin complexes in sputum for COPD, blood pressure, pulse rate, WBC, Hemoglobin, Leukotriene B<sub>4</sub>, Platelet Factor IV, 11-Dehydro-thromboxane B<sub>2</sub> and 8-Epi-Prostaglandin F<sub>2 $\alpha$</sub>  in urine for cardio-vascular diseases. We are exploring these biomarkers in our clinical studies for their usefulness in the evaluation of potentially reduced harm products. (INBIFO is a Philip Morris research laboratory.)